Amendments to the Claims:

1. (Currently amended) A method for automatically generating a network subnet configuration:

establishing and maintaining in memory a table of learned IP subnets, each of which includes a characterizing learned subnet address, a mask for identifying IP address bits common to all members of the learned subnet and the forwarding port ~~domain~~ of the subnet;

intercepting IP ARP frames;

extracting source and destination IP addresses from an intercepted IP ARP frame;

examining the table of learned subnets to determine if the extracted IP addresses belong to one or more of the learned subnets;

if neither IP address belongs to a learned subnet, defining a new learned IP subnet address for inclusion in the table stored in the memory from the common elements in the prefix of the IP addresses, including the port over which the ARP frame was received in the forwarding domain of the learned subnet and generating a mask which identifies all of the common elements in the prefixes of both IP addresses.

2. (Previously Presented) A method for automatically generating a network subnet configuration by monitoring IP Address Resolution Protocol (ARP) frames on the network and building and maintaining a table including a list of learned subnets, the ports associated with each of the learned subnets and a mask associated with each learned subnet for identifying hosts belonging to the subnet, said method including:

establishing and maintaining in memory a table of learned IP subnets, each of which includes a characterizing learned subnet address, a mask for identifying the IP address bits common to all members of the learned subnet and the forwarding domain of the subnet;

intercepting IP ARP frames;

extracting the source and destination IP addresses from an intercepted IP ARP frame:

examining the table of learned subnets to determine if the extracted IP addresses belong to one or more of the learned subnets;

if neither IP address belongs to a learned subnet, defining a new learned IP subnet address for inclusion in the table stored in the memory from the common elements in the prefix of the IP addresses, including the port over which the ARP frame was received in the forwarding domain of the learned subnet and generating a mask which identifies all of the common elements in the prefixes of both IP addresses;

if only one IP address belongs to a previously learned subnet, examine the subnet mask and modify it include all the common elements in the prefix of both IP addresses in the ARP frame; and

add the port over which the ARP frame was received to the port list associated with the learned IP subnet if it was not already in the list of associated ports.

3. (Previously Presented) The method set forth in claim 2 including:

if the IP addresses in the received ARP frame belong to different learned subnets:

combine the learned subnets to form a new learned subnet

create a new mask which includes the common prefix IP address elements of both host IP addresses engaged in the ARP frame; and

add the port over which the IP ARP frame was received to the combined forwarding domains of the previously identified subnets if that port was not included therein.

4. (Previously Presented) A method for automatically generating a network subnet configuration by monitoring IP Address Resolution Protocol (ARP) frames on the network and building and maintaining a table including a list of learned subnets, ports associated with each of the learned subnets and a mask associated with each of the learned subnets for identifying hosts belonging to each of the learned subnets, said method including:

maintaining in memory a table of learned IP subnet addresses, each of which includes a characterizing address, a mask for the IP address bits common to all members of the learned subnet and the forwarding domain of the subnet;

intercepting IP ARP frames;

extracting source and destination IP addresses from an intercepted IP ARP frame:

examining the table of learned subnets to determine if the extracted IP addresses belong to one or more of the learned subnets;

if neither IP address belongs to a learned subnet, defining a new learned IP subnet address for inclusion in the table stored in the memory from the common elements in the prefix of the IP addresses, including the port over which the ARP frame was received in the forwarding domain of the learned subnet and generating a mask which identifies all of the common elements in the prefixes of both IP addresses;

if only one IP address belongs to a learned subnet, examine the subnet mask and modify it if necessary to only include all the common elements in the prefix of both IP addresses and add the port over which the ARP frame was received to the port list associated with the learned IP subnet if it was not already in the list of associated ports; and

if the IP addresses belong to different learned subnets the learned subnets are combined to form a new learned subnet with a mask which includes both host IP addresses in the learned subnet and add the port over which the IP ARP frame was received to the combined forwarding domains of the previously identified subnets if that port was not included therein.

5. (Previously Presented) The method set forth in claim 4 including:

upon establishing a new learned subnet starting a split interval timer;

upon receipt of each ARP frame belonging to the subnet generating a split potential value for the learned subnet which is related to the number of common bits in the source and destination IP addresses in the received ARP frame and replacing a previously

generated split potential value if the current value exceed a previously generated value; and

at the expiration of the split interval, splitting the learned subnet if the split potential exceeds a predetermined value.

6. (Original) The method set forth in claim 5 in which the forwarding domain of the split learned subnet includes the port over which the ARP frame causing the last split potential was received.

7. (Previously Presented) The method of claim 1 wherein the table further includes ports associated with each of the learned subnets and a second mask associated with each of the learned subnets to identify hosts belonging to each of the learned subnets.